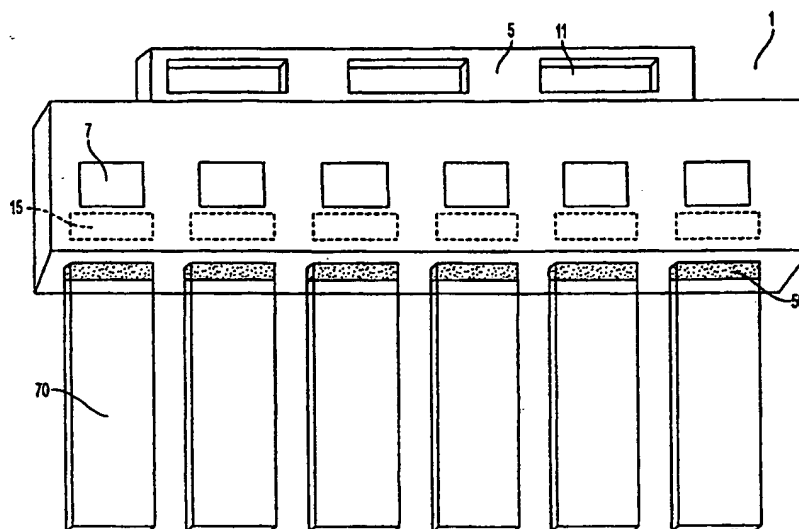




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(54) Title: **APPARATUS AND METHODS FOR EFFICIENT PROCESSING OF BIOLOGICAL SAMPLES ON SLIDES**



(57) Abstract

Methods for treating biological samples on microscope slides (70) are set forth. One aspect of the invention is the use of predried reagents in wells (24) on trays (90) onto which the slides are placed, especially the use of predried reagents which dissolve sequentially. Yet another aspect of the invention is the use of external controls (230) placed directly on a microscope slide (70) in conjunction with a biological sample to be assayed. The external controls (230) can be conveniently placed on a membrane which can be affixed to the slide. A further aspect of the invention is a specially designed tray (90) to allow whole chromosome painting of all chromosomes of a cell sample on a single slide. The invention is also drawn to a coverslip (500) with concave wells which act as reaction chambers when placed against a slide (70) and filled with buffer. Preferably a reagent is predried in the well (24). A further aspect of the invention is a method of reacting samples on slides (70) by placing them into a reaction chamber (280) together with a coverslip (500) which has a predried reagent on it.